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CORRESPONDENCE

Genus *Autosticha* Meyrick (Lepidoptera: Autostichidae) from Taiwan, China

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Abstract Fourteen species of the genus *Autosticha* Meyrick, 1886 are recorded from Taiwan, China. The genus *Cynicocrates* Meyrick, 1935 is proposed as a new synonym of *Autosticha*, and its type species *A. tachytoma* (Meyrick, 1935) **comb. nov.** is transferred to *Autosticha*. *Autosticha cordiformis* **sp. nov.** is described as new, and *A. tachytoma* is redescribed with male for the first time. A checklist of all the described species in Taiwan is given. Photographs of the new species and the newly combined species are provided.

Key words *Cynicocrates*, taxonomy, new species, new combination.

The genus *Autosticha* was established as an objective replacement name for *Autoola* Meyrick, 1883, with over one hundred species worldwide. Fifty species were recorded in China prior to this study, including eight species from Taiwan (Heppner, 2012; Park & Wu, 2003; Wang, 2004). In this paper, we describe one new species, *A. cordiformis* **sp. nov.**, transfer *Cynicocrates* Meyrick, 1935 from Xyloryctidae to Autostichidae as the synonym of *Autosticha*, and its type species, *Cynicocrates tachytoma* Meyrick, 1935 to *Autosticha*. In addition, *A. tachytoma* (Meyrick, 1935) **comb. nov.** is redescribed with its male for the first time. All the described *Autosticha* species in Taiwan are listed. The studied specimens are deposited respectively in the Natural History Museum of Humboldt University, Berlin, Germany (MNHU) and the Korea National Arboretum, Pocheon, Korea (KNA).

Genus *Autosticha* Meyrick, 1886

Autosticha Meyrick, 1886: 281. (objective replacement name for *Automola* Meyrick, 1883, nom. Praeocc.). Type species: *Automola pelodes* Meyrick, 1883, by monotypy.
Automola Meyrick, 1883: 31. Type species: *Automola pelodes* Meyrick, 1883, by monotypy.
Epicharma Walsingharm, 1897: 38. Type species: *Epicharma nothriforme* Walsingham, 1897, by original designation.
Epicoenia Meyrick, 1906: 140. Type species: *Epicoenia chernetis* Meyrick, 1906, by original designation.
Prosomura Turner, 1919: 147. Type species: *Prosomura symmetra* Turner, 1919, by monotypy.
Semnolocha Meyrick, 1936: 49. Type species: *Semnolocha pachysticta* Meyrick, 1936, by monotypy.
Cynicocrates Meyrick, 1935: 565. Type species: *Cynicocrates tachytoma* Meyrick, 1935, by monotypy. **Syn. nov.**

Diagnosis. *Autosticha* is characterized by the antenna without pecten, the forewing usually with fuscous to black discal, discocellular, plical and tornal spots, and a row of terminal dark dots that usually range from distal part of costal margin along termen to tornus; in the male genitalia often by having a short tongue-shaped or spatulate gnathos with narrow lateral bands; and in the female genitalia by the elongate or plate-like signum often with a pair of thorn-like processes.

Remarks. *Cynicocrates* was erected by Meyrick (1935), with the monotypic species *C. tachytoma* Meyrick, 1935, based on a female specimen from Taiwan. It was originally placed in the family Gelechiidae, transferred to Timyridae (now Lecithoceridae) by Clarke (1955), and to Xyloryctidae by Gozmány (1978). We herein treat it as the synonym of *Autosticha*,

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based on the forewing with discal, discocellular and plical spots, R_4 and R_5 coincident, CuA_1 and CuA_2 separate, the hindwing with Rs and M_1 stalked basally, M_3 and CuA_1 stalked basally, and the narrow digitate gnathos with long narrowly banded lateral arms in the male genitalia.

***Autosticha cordiformis* sp. nov.** (Figs 1–2)

Material examined. Holotype ♂, Nantou Hueisun Exp. Forest, Taiwan, China (elev. 650 m), 24−29 October 1998, coll. W. Mey & W. Speidel, genitalia slide No. MNHU-NK143 (MNHU).

Diagnosis. This new species can be distinguished from other described species by having a heart-shaped sacculus, which is often papillate, triangular, thorn-like, beak-shaped or underdeveloped.

Description. Adult (Fig. 1). Wingspan 9.0 mm. Head yellowish brown. Labial palpus yellowish brown except blackish brown on outer surface and on distal part of second segment. Antenna yellowish brown, narrowly ringed with brown. Thorax and tegula grayish white except basal part of tegula with blackish brown scales. Forewing yellowish brown, costal margin with basal 1/4 blackish brown; terminal dots balckish brown, ranging from distal 1/4 of costal margin along termen to tornus; discal, discocellular and plical spots blackish brown, discocellular spot largest; cilia pale blackish brown. Hindwing and cilia pale gray. Fore- and midlegs yellowish white on dorsal surface, yellowish brown on ventral surface, tibiae and tarsi mixed with white; hindleg pale yellowish white.

Male genitalia (Fig. 2). Uncus spatulate, narrow at base, broadened to before rounded apex. Gnathos triangular, with long setae; lateral arms broadly banded, approximately twice length of gnathos. Valva foliate; costa narrow, reaching before apex; ventral margin arched and protruded medially. Sacculus heart-shaped, about 1/4 length of valva. Saccus broad triangular, wide at base, narrowed to apex, about half length of uncus. Juxta triangular, slightly protruded at middle on anterior margin. Aedeagus approximately 3/5 length of valva, slightly narrowed distally, narrowly rounded apically; cornuti consisting of a bunch of teeth, ranging from middle to before apex.

Female. Unknown.

Distribution. China (Taiwan).

Etymology. The specific name is derived from the Latin *cordiformis* (cordiform), referring to the shape of the sacculus.

***Autosticha tachytoma* (Meyrick,1935) comb. nov.** (Figs 3–5)
Cynicocrates tachytoma Meyrick,1935: 566. TL: China (Taiwan).

Material examined. Nantou Hueisun Exp. Forest, Taiwan, China (elev. 1100 m), 1♂, 1♀, 22−24 April 1999, coll. W. Mey & Ebert, genitalia slide Nos. MNHU-NK140♂, MNHU-NK141♀ (MNHU); Tikusiko, Taiwan, China, 1♀, 6 August 1933, coll S. Issiki, genitalia slide No. KNA-NK179♀ (KNA); Sozan, Taiwan, China, 1♀, 13 May 1935, coll. S. Issiki, genitalia slide No. KNA-NK15178♀ (KNA).

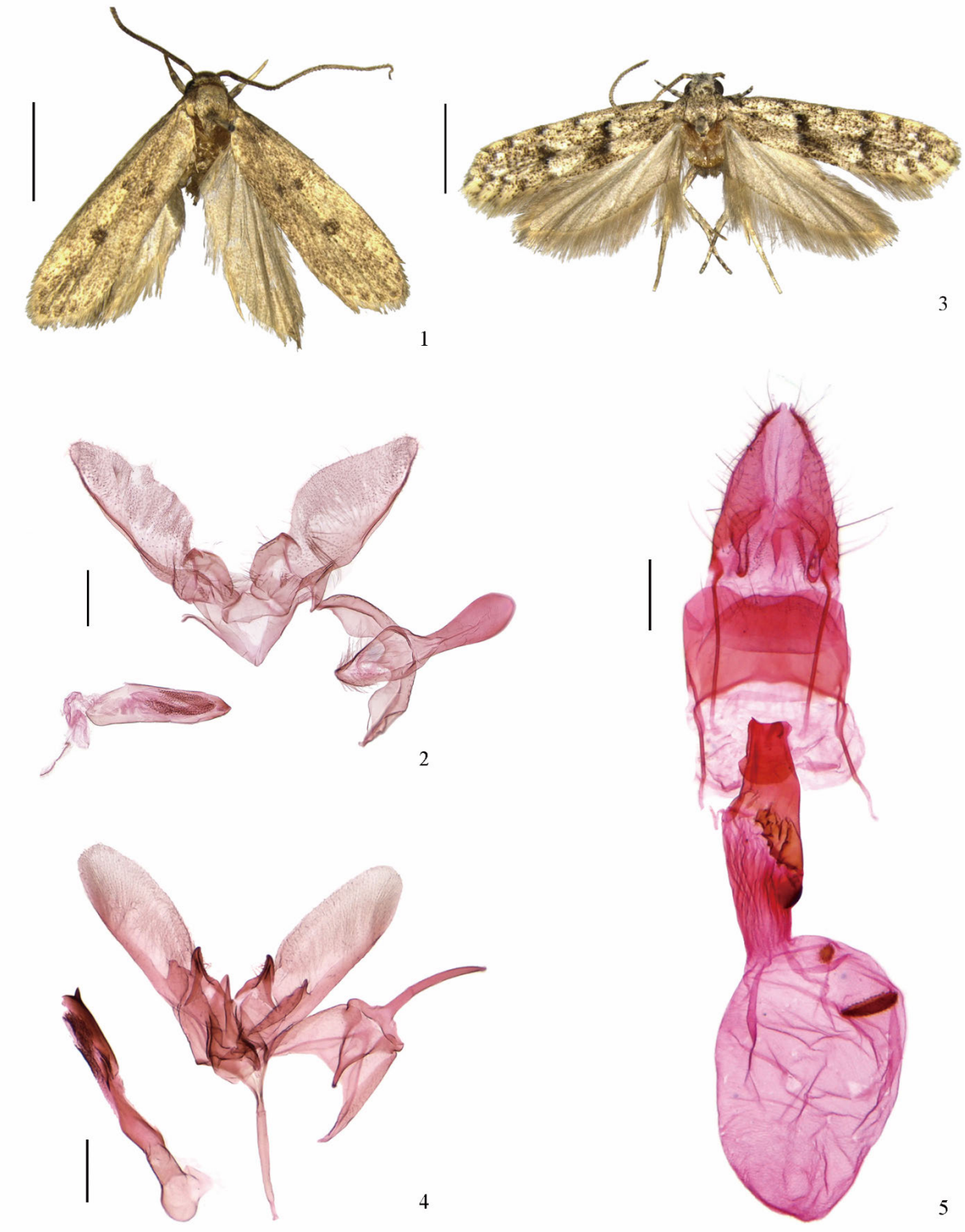
Diagnosis. This species is similar to *A. dimochla* Meyrick, 1935 superficially. It can be distinguished by the costa with basal 2/5 dorsally protruded to an elongate foliate process and the triangular sacculus; in *A. dimochla*, the costa has a trapezoidal process and the sacculus is beak-shaped.

Redescription. Adult (Fig. 3). Wingspan 11.0−14.0 mm. Head grayish white mixed with lackish brown. Labial palpus white, second segment brown on basal half and before apex, third segment brown near base and before apex. Antenna with scape brown, flagellum brown and yellowish brown. Thorax and tegula grayish white, covered with dense grayish brown scales. Forewing creamy white, with dense blackish brown scales; costal margin with five subrounded blackish brown spots at base, at basal 1/4, at middle, beyond 3/5 and at distal 1/4 respectively; terminal dots blackish brown, ranging from distal 1/5 of costal margin along termen to tornus; discal spot subrectangular, discocellular spot rhombic, plical spot large, diffused to dorsum; fold with a small blackish brown spot at base; cilia grayish white, tinged with brown. Hindwing and cilia grayish brown. Foreleg deep brown, grayish white at apex of tibia and each tarsomere; midleg blackish brown on dorsal surface, yellowish brown on ventral surface, blackish brown at apex of tibia and distal part of each tarsomere; hindleg pale yellowish brown, tarsus deep brown distally.

Male genitalia (Fig. 4). Uncus slender, longer than gnathos, pointed at apex. Gnathos narrow digitate, narrower than uncus, slightly narrowed to blunt apex; lateral arms expanded at base, approximately 1.5 times length of gnathos. Valva sub-rectangular, bluntly rounded at apex; costa nearly straight, reaching 3/4 length of costal margin; basal 2/5 with an elongate foliate process wider than costa, protruded distally, sinuate on dorsal margin. Sacculus sub-triangular, free distally, about 1/4 length of valva, with setae ventrally. Saccus slender, longer than uncus, blunt at apex. Juxta elongate peltate, straight anteriorly, protruded posteriorly. Aedeagus approximately same length as valva, curved, dilately basally; distal 1/3 slightly thicked, with dense spinules, with a large denticle before apex; cornuti consisting of two slender sclerites beyond distal 1/3

and a patch of spines distally.

Female genitalia (Fig. 5). Pappilae anales triangular, rounded caudally, setose. Apophyses posteriores approximately 1.2 times length of apophyses anteriores. Eighth tergite broadly concave at middle on posterior margin; eighth sternite



Figures 1–5. *Autosticha* spp. 1–2. *A. cordiformis* **sp. nov.** 1. Adult. 2. Male genitalia, slide No. MNHU-NK143. 3–5. *A. tachytoma* **comb. nov.** 3. Adult. 4. Male genitalia, slide No. MNHU-NK140. 5. Female genitalia, slide No. MNHU-NK141. Scale bars: 1, 3 = 2.0 mm; 2, 4–5 = 0.2 mm.

rounded on posterior margin, slightly concave on anterior margin. Ductus bursae narrow at base, slightly widened to middle, then narrowed toward corpus bursae; large sclerite at middle, about 1/4 length of ductus bursae, bearing some teeth of different size; distal half with crumples. Ductus seminalis long and thin, from before middle of ductus bursae. Corpus bursae ovate, with two densely spinuous signa: one signum small and round, situated near posterior margin of corpus bursae; another signum larger, tansversely elongate ovate, situated at posterior 1/3 of corpus bursae.

Distribution. China (Hainan, Taiwan, Zhejiang).

Notes. This species was originally described based on a female specimen. The male is described the first time here.

Checklist of *Autosticha* Meyrick in Taiwan

***Autosticha shenae* Wang, 2004**

Autosticha shenae Wang, 2004: 52. TL: China (Jiangxi).

Material examined. Ming-Chi Ilan Co., Taiwan, China (elev. 1160 m), 1♂, 9−10 July 1996, coll. K.T. Park & H.K. Lee, genitalia slide No. KNA-NK15177 (KNA).

Distribution. China (Fujian, Jiangxi, Taiwan, Zhejiang).

Notes. This species is newly recorded for Taiwan.

***Autosticha dimochla* Meyrick, 1935**

Autosticha dimochla Meyrick, 1935: 76. TL: China (Hunan).

Material examined. Nantou Hueisun Exp. Forest, Taiwan, China (elev. 650 m), 3♀, 24−29 October, coll. W. Mey & W. Speidel, genitalia slide No. MNHU-NK137♀ (MNHU); Taipei Co. Wulai, Taiwan, China (elev. 400 m), 1♀, 1−2 March 2000, coll. W. Speidel, genitalia slide No. MNHU-NK147♀ (MNHU); Lia-Hwa-Chi, Nantou Co., Taiwan, China (elev. 690 m), 1♂, 4 July 1996, coll. K.T. Park & H.K. Lee, genitalia slide No. KNA-NK15180♂ (KNA).

Distribution. China (Anhui, Fujian, Hebei, Henan, Hunan, Jiangsu, Liaoning, Shanxi, Taiwan, Tianjin, Zhejiang), Korea.

Notes. This species is newly recorded for Taiwan.

***Autosticha pachysticta* (Meyrick, 1936)**

Semnolocha pachysticta Meyrick, 1936: 49. TL: Japan.
Autosticha pachysticta (Meyrick): Ueda, 1997: 117.

Material examined. Nantou Hueisun Exp. Forest, Taiwan, China (elev. 1100 m), 2♂, 22−24 April 1999, coll. W. Mey & Ebert; Nantou Hueisun Exp. Forest, Taiwan, China (elev. 600 m), 8♂, 25−27 April 1999, coll. W. Mey & Ebert, genitalia slide No. MNHU-NK133 (MNHU).

Distribution. China (Anhui, Hebei, Hainan, Liaoning, Sichuan, Taiwan, Zhejiang), Japan, Korea.

Notes. This species is newly recorded for Taiwan.

***Autosticha microphilodema* Wang, 2004**

Autosticha microphilodema Wang, 2004: 41. TL: China (Henan).

Material examined. Nantou Hueisun Exp. Forest, Taiwan, China (elev. 650 m), 5♂, 1♀, 24−29 October 1998, coll. W. Mey & W. Speidel, genitalia slide No. MNHU-NK135♂; Nantou Hueisun Exp. Forest, Taiwan, China (elev. 600 m), 3♂, 25−27 April 1999, coll. W. Mey & Ebert, genitalia slide Nos. MNHU-NK135, MNHU-NK136 (MNHU).

Distribution. China (Chongqing, Hebei, Henan, Hubei, Shanxi, Taiwan, Zhejiang).

Notes. This species is newly recorded for Taiwan.

***Autosticha consimilis* Park & Wu, 2003**

Autosticha consimilis Park & Wu, 2003: 209. TL: China (Taiwan).

Distribution. China (Taiwan).

***Autosticha imitativa* Ueda, 1997**

Autosticha imitativa Ueda, 1997: 113. TL: Japan.

Distribution. China (Jiangxi, Shanghai, Taiwan), Japan.

***Autosticha lushanensis* Park & Wu, 2003**
Autosticha lushanensis Park & Wu, 2003: 206. TL: China (Taiwan).

Distribution. China (Beijing, Guangdong, Hainan, Jiangxi, Sichuan, Taiwan, Zhejiang).

***Autosticha mingchrica* Park & Wu, 2003**
Autosticha mingchrica Park & Wu, 2003: 2114. TL: China (Taiwan).

Distribution. China (Taiwan).

***Autosticha modicella* (Christoph, 1882)**
Ceratpphora modicella Christoph, 1882: 28. TL: Russia.
Brachmia modicella (Christoph): Rebel, 1901: 157.
Autosticha modicella (Christoph): Ueda, 1997: 115.

Distribution. China (Chongqing, Hainan, Hebei, Heilongjiang, Henan, Hubei, Inner Mongolia, Jilin, Liaoning, Shanxi, Sichuan, Taiwan, Tianjin, Yunnan, Zhejiang), Russia, Japan, Korea.

***Autosticha opaca* (Meyrick, 1927)**
Brachmia opaca Meyrick, 1927: 421. TL: China (Sichuan).
Autosticha opaca (Meyrick): Ueda, 1997: 125.

Distribution. China (Hunan, Jiangsu, Sichuan, Taiwan, Zhejiang), Japan, Korea.

***Autosticha pyungyangensis* Park & Wu, 2003**
Autosticha pyungyangensis Park & Wu, 2003: 222. TL: China (Korea), Korea.

Distribution. China (Jiangxi, Taiwan), Korea.

***Autosticha taiwana* Park & Wu, 2003**
Autosticha Taiwana Park & Wu, 2003: 213. TL: China (Taiwan).

Distribution. China (Taiwan).

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